APPLICATION FOR UNITED STATES LETTERS PATENT

FOR

MINI CELLS WITH VARIABLE PAYLOAD SIZE

BY

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TECHNICAL FIELD OF THE INVENTION

This invention relates to telecommunication networks in general and to the transport network of a mobile telephone network. ATM cells are used for transmission of data. The payload of an ATM cell comprises mini cells.

DESCRIPTION OF RELATED ART

EP-A1 528 085 describes the use on non-standard short cells, called mini cells, for transmission of information. Mini cells are used in order to reduce the time it takes to fill an empty mini cell with information, the so called packetizing time. Reduced packetizing time will eliminate the need of echo cancellers for a connection which extends between two STM switches via an intermediate ATM switch. Standard ATM cells, comprising 53 octets, are used for connections which extends between a STM switch and ATM switch via an intermediate ATM switch.

PCT/SE95/00575 describes an ATM switch for emulating circuit oriented traffic using short cells in order to reduce the delay through the ATM switch. Small cells are also used in order to save bandwidth on a physical route within the switch. A switch internal interface defines the small cells. Within an ATM switch mini cells of different sizes are used simultaneously. The size of a mini cell is selected from a number of predefined cell sizes. In the payload of a cell, and in particular in the payload of an ATM cell, one or more mini cells are transported within the ATM switch. A central controller selects the cell size to be used for an individual connection. The cell size is changed at a mapping unit resident in the ATM switch. In the header of a short cell a

field of fixed length, 4 bits, is used to indicate the size of the cell. The cell header also comprises a cell format indicator bit. If the cell format indicator is 0 the payload of the cell comprises 3 octets (time slots) and if the cell format indicator equals 1 this indicates that the header is extended by on octet. The extended header comprises a field of fixed length, 4 bits, which is used to indicate the size of the payload of the cell. In this patent it is also indicated that the size of the cell may be indirectly given by the cell's physical route identifier PRI and the virtual path VP to which it is assigned within the switch. No method for changing the size of a cell of an ongoing connection is disclosed in the patent.

DE 43 26 377 relates to frame relay and describes a method by which it is possible to distinguish between user data frames on the one hand and operation and maintenance frames on the other hand by using a particular bit in a particular octet of the address field of a frame. It the particular bit is 0 the frame is an ordinary user data frame and if it is set to 1 the frame is an operation and maintenance cell. This is possible since, according to CCITT recommendation Q.922, this particular bit is not used for any purpose of carrying information.

Japanese patent 58-181392 relates to a pulse modulated remote controlling system. Transmission time of a control instruction is decreased by using an extension code in predefined bits. The predefined bits are, according to the standardized transmission format, not used for any purpose of carrying information.

In ANSI T1S1.5/95-001 Revision 1, "An AAL for transporting Short Multiplexed Packets (SMAAL)", Dec 95, the ATM adaptation layer AAL encapsulates and transports short user packages inside an ATM cell stream. A field of fixed length is used to indicate the length of the mini cell. The main shortcoming adhering the use of a field of fixed length